

January 31, 1955

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PROGRESS REPORT NO. 1

This brief summary report covers activity on the design and construction of a high altitude reconnaissance aircraft during the period from December 1st, 1954, to January 31st, 1955.

ENGINEERING:

During the period mentioned above, the project was organized and twenty-seven selected engineers were placed on the program, under the direct supervision of Clarence L. Johnson, Chief Engineer of the Lockheed Aircraft Corporation, California Division.

The aircraft was designed and subjected to wind tunnel tests to determine its aerodynamic characteristics. Description of the airplane is contained in separate reports, not to be referred to herein. The wind tunnel tests have confirmed precisely the original expectations of the design. Excellent stability, control, and handling characteristics are evident. During the course of the tests, it was necessary to revise the horizontal and vertical tail to assure adequate stability at high altitude. Having accomplished this, no further aerodynamic changes are required in the design.

A model is being prepared of the engine air ducts, for the purpose of investigating the pressure distribution at the engine inlet.

Structural design has progressed to the point where an increasing volume of detail drawings is flowing into the shop. Major elements of the tail, wing, and fuselage have been released from Engineering. A schedule correlated between Engineering and the shop has been set up and releases are on schedule.

Mock-ups of the equipment bay are scheduled for completion the week of February 1st. Contacts with the equipment designers and builders have set up general agreement on items to be installed and on schedules. The attitude of the equipment manufacturers toward the weight problem is of considerable concern to the writer, as the agreed weight of 450 pounds should not be exceeded.

SHOP:

First airplane parts were completed December 29th, 1954. Major elements of the wing, tail, and fuselage jigs have been completed, except that machined parts for precise location of elements are still in construction. Photographs are appended showing the jig construction.

PROCUREMENT AND MATERIAL HANDLING:

Special means for obtaining items peculiar to this project have been set up outside of normal Lockheed procedures. Those items which are common to all types of aircraft are being taken from Lockheed stores. A list of GFE required, spare parts to be constructed, and the static test article have been completed. The contract for procurement of the main landing gear elements is being negotiated.

SECURITY:

The complete Engineering Experimental building has been put under heavy guard, taking security measures discussed with certain government representatives. All engineers were cleared prior to working on the project, and the manufacturing shop people have been cleared and impressed with the necessity for secrecy on this project. Several employees were transferred away from the Engineering Experimental shop during the screening process, because of questioned connections.

COSTS:

A curve of estimated expenditures and actual expenditures to date is attached. No factors have developed which indicate that the original estimated cost should be exceeded.

SCHEDULES:

The completion schedule for the aircraft has been indicated in a separate report. Flight dates have now been selected as follows:

Airplane #1 - Aug. 8, 1955
#2 - Sept. 15, 1955
#3 - Oct. 20, 1955
#4 - Nov. 28, 1955

Barring unforeseen difficulties, the flight test program should be completed by December 26th, 1955, with four airplanes available for service on January 2nd, 1956.

The flight dates are approximately 2-1/2 weeks after completion of construction at Burbank, to allow for shipping to the test base and for various pre-flight tests and taxi tests. Completion of the #1 airplane is set for the end of the day shift, 3:30 P.M., July 20th, 1955.

SPECIAL ACTIVITIES:


Two special studies have been started -- one covering various aspects of transportability of the aircraft and the second being an operational analysis to establish optimum use of the aircraft, crew requirements, optimum flight patterns, capabilities of equipment and personnel. An investigation has been made on the effect of cosmic ray activity on the pilot's health.

GENERAL PROJECT OUTLOOK:

Excellent.

Major problems of concern are:

1. Operation of the power plant at high altitude.
2. Availability and weight of special equipment.


Clarence L. Johnson
Chief Engineer

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CLJ:vmp

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PROGRESS REPORT

Progress Report #1

Rate of Expenditure Curve

Construction Photographs

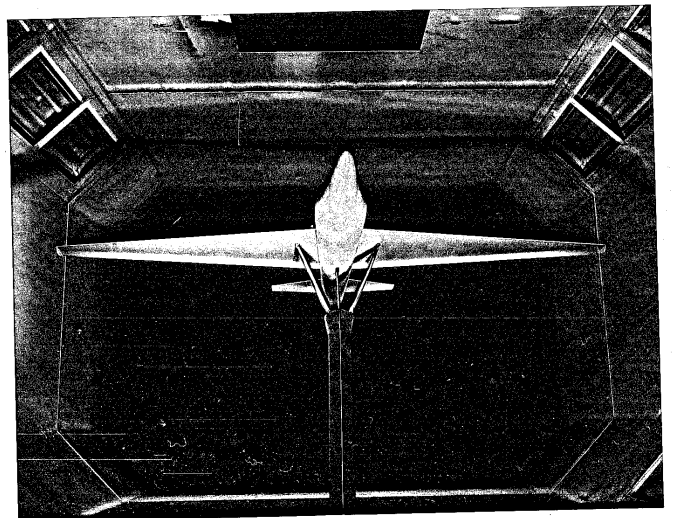
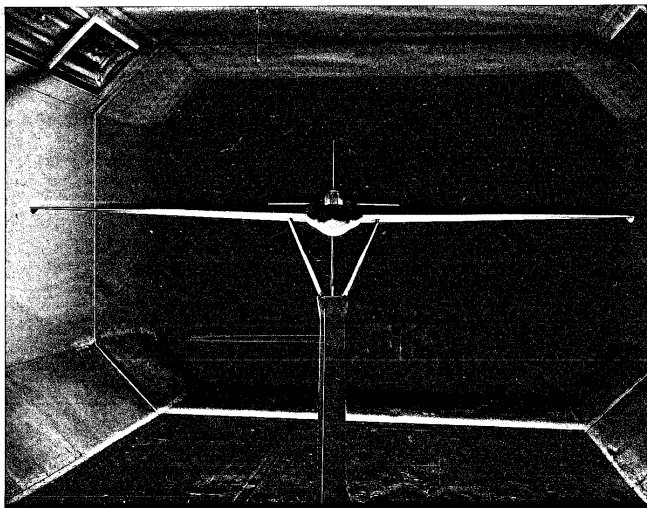
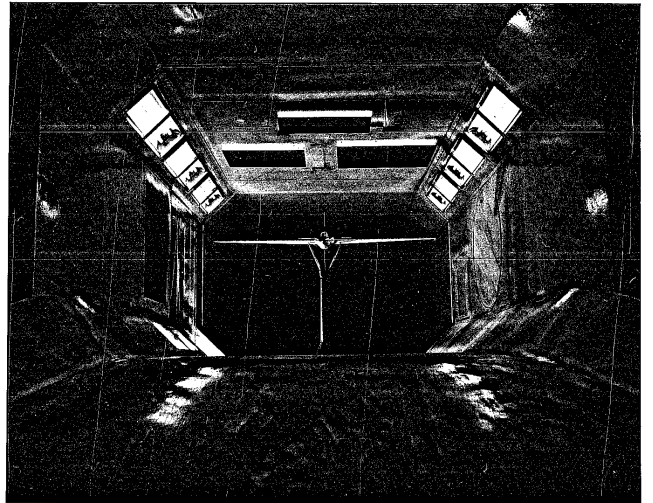
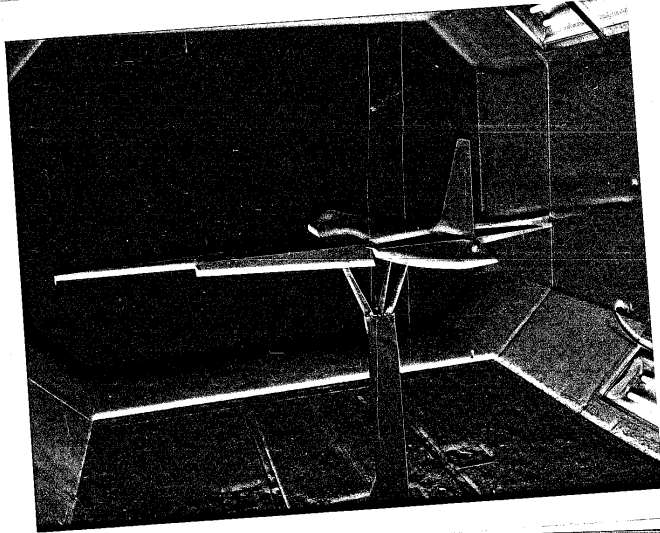
Wind Tunnel Model Photographs (ten)

STAT Meme to C.L. Johnson on "Health Hazards of Cosmic
Radiation"

Plan of Operation for Engineering Experimental Division

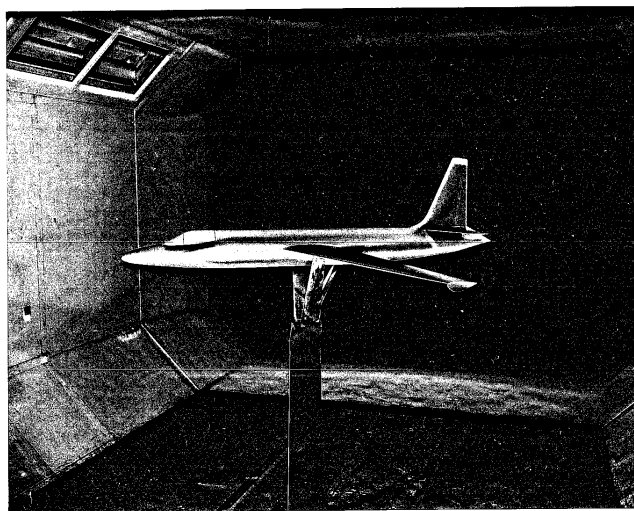
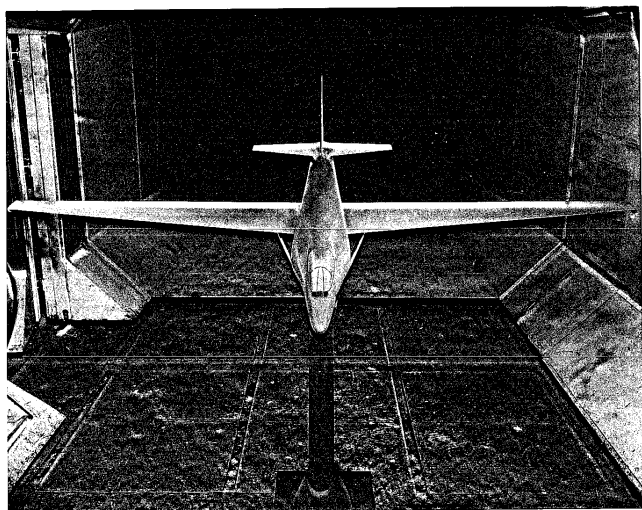
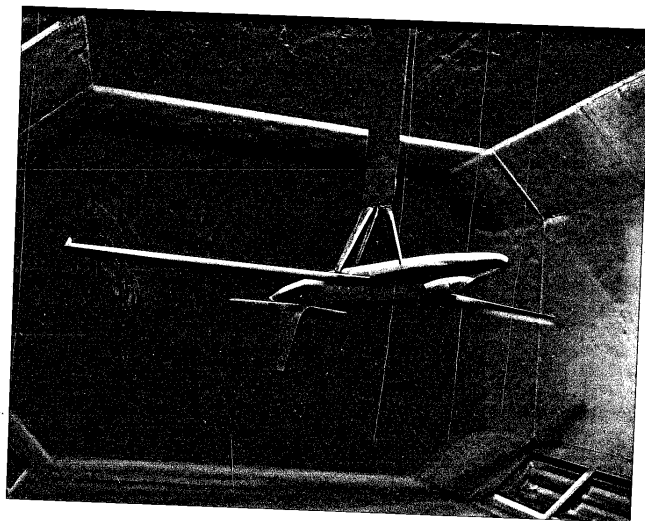
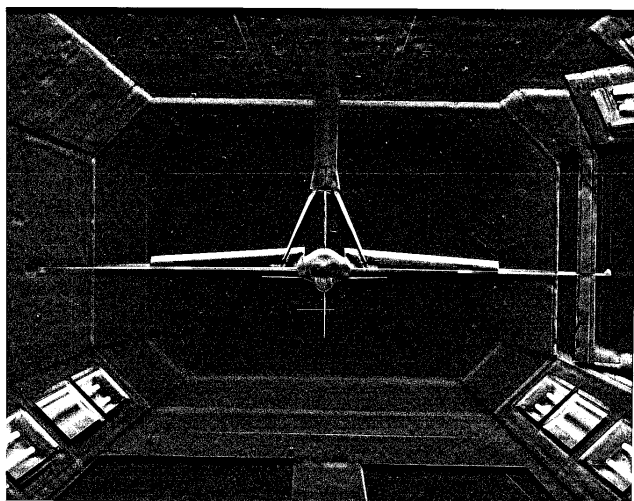
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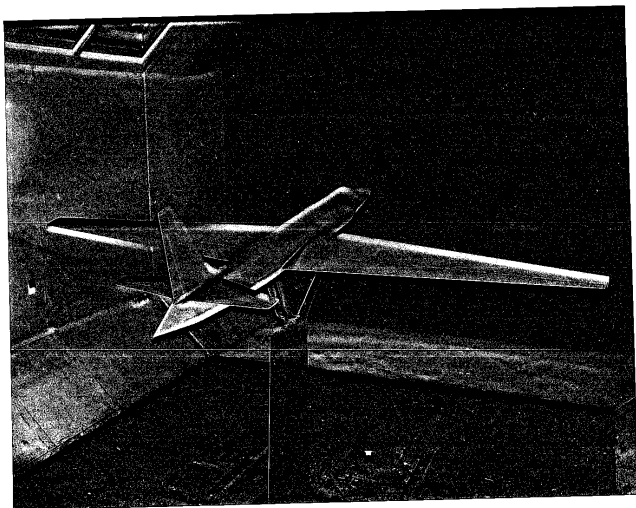
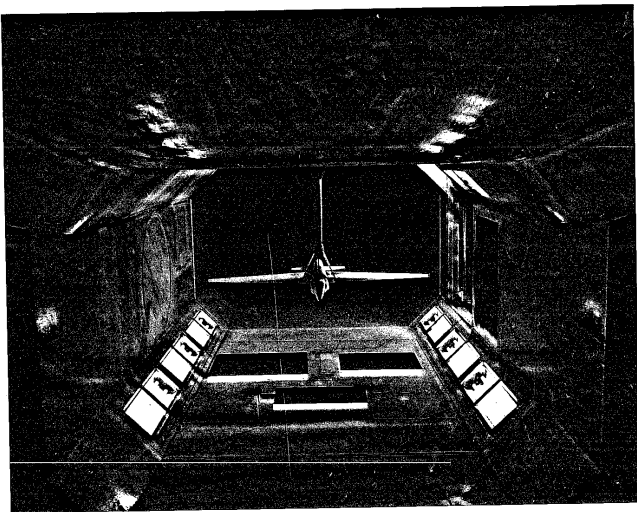
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